

**ABSTRACT OF THE DISCLOSURE**

Methods and systems are provided for sequence number checking. Sequence numbers of data packets are compared to a "sliding" window. The sliding window indicates a range of sequence numbers considered valid (or invalid). The size of the sliding window may be a particular value or varied. If a sequence number is "below" the sliding window, then it may be considered invalid. If a sequence number is within the sliding window, then it may be further checked to determine if a duplicate sequence number has been received. If a sequence number is "above" the sliding window, then it may be considered valid and the sliding window is advanced. The sliding window and sequence numbers are processed using multiple level bitmaps, which indicate a historical state of sequence numbers received. Furthermore, the multiple level bitmaps may comprise summary bits to summarize a state of subsequent bits.

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